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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/554,167	07/11/00	GICQUEL	T 72211/9011

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HM22/0523

EXAMINER

PADMANABHAN, K

ART UNIT	PAPER NUMBER
1641	8

DATE MAILED: 05/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/554,167

Applicant(s)

GICQUEL ET AL.

Examiner

Kartic Padmanabhan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 2, 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-10 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
 1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1, 4-10, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uzan et al. (US Pat. 5,849,247) in view of Berthold et al. (US Pat. 5,048,957), Smethers et al. (US Pat. 5,643,535), and Honzawa et al. (US Pat. 5,637,874).

Uzan et al. teaches an automatic immunological assay comprising reaction wells, means

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for supporting samples to be analyzed, means for supporting reagents, means for taking determined quantities of samples and of reagents and depositing them in reaction wells, means for reading assay results, and means for displacing the wells (col. 1). The reference also teaches means for washing or rinsing the beads in the vessels (col. 2). Furthermore, the reaction modules are formed as single pieces by molding plastics, each comprising eight reaction wells (col. 3). In addition, the reference also teaches the use of a pivoting arm that is used to position reagents or samples (col. 5). A substrate specific to a specific enzyme in the reaction well is deposited in the well, and enzyme interaction takes place, which is followed by reading of the results (col. 7).

Uzan et al. also teach horizontal plates for receiving or supporting the washing means and photometric means. The reference does not teach the specific use of vessels with opaque sides, a chemiluminescent substance as the enzyme in the reaction well, a shutter mechanism, or a light proof shoe.

Berthold et al. teach a specimen rack made of radiopaque material, such that each cuvette, except for a region defined by the lower opening cross section of the through chambers and their upper filling opening, is continuously shielded from scattering radiation from adjacent cuvettes (abstract). The reference does not teach the use of a chemiluminescent substance, a shutter, or a light proof shoe.

Smethers et al. teach a luminometer with reduced sample crosstalk comprising an array of sample wells, a photodetector assembly, and means for moving the sample tray and photodetector (abstract). Each well in the array has a structure defining a window through which light can be emitted (col. 2). The reference also teaches the use of luminescence, either chemiluminescence or bioluminescence, as an effective for the determination of a variety of analytes (col. 1). Smethers

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et al. also teach a photodetector internal-calibration system. This includes a sealed chamber with a light source contained therein, a photosensor, and means for directing the light emitted from the light source to the photodetector when the assembly is positioned at an internal calibration system station. In addition, the reference teaches an external calibration system (col. 2). The reference does not teach the use of a shutter or lightproof shoe.

Honzawa et al. teach a chemiluminescence measuring apparatus comprising a shutter mechanism. The shutter mechanism, when closed, will create a temporary dark chamber that is proof against external light, at which time the photodetector will measure the luminescence. Furthermore, the shutter mechanism includes a rotating hollow chamber, which houses the vessel, a dark box, which can be interpreted as a light-proof shoe, that encompasses the read window, and a photosensing unit, which includes a photomultiplier (col. 2). The rotation of the cylindrical member determines when the shutter opens and closes, and correspondingly when the luminescence is measured. In addition, the dark box portion of the lightproof shoe has an opening that creates an optical path between the vessel and photometric means (col. 2).

It would have been *prima facie* obvious to one of ordinary skill at the time of the invention to use the opaque vessel of Berthold et al. and the chemiluminescent label of Smethers et al. with the vessel of Uzan et al. One would have been motivated to use a chemiluminescent label with the vessel of Uzan et al. because they teach the generic use an enzyme specific for a substrate that produces a detectable signal. Chemiluminescent labels are widely used for this purpose, and would have been an obvious choice for use in the vessel. In addition, one would have been motivated to use a vessel or well with opaque sides to reduce the cross talk or contamination of

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reading between cells. Since opaque sides limit the emission of light to the top-filling opening, other wells will not be contaminated with the results of adjacent wells.

It would have further been *prima facie* obvious to one of ordinary skill at the time of the invention to use the shutter mechanism and light-proof shoe of Honzawa et al. with the modified vessel of Uzan et al. One would have been motivated to use the shutter mechanism to create a temporary dark chamber to obtain a luminescence reading. Furthermore, a shutter mechanism is well known in the art, as the majority of commercially available photometry instruments utilize these mechanisms to take luminescence readings. In addition, a lightproof shoe can be interpreted as any enclosure or part that is impermeable to light. Once again, this is well known in the art, as all photometers utilize this technique. It would have been obvious to use the calibration system of Smethers et al. with the modified device of Uzan et al. in order to ensure accurate readings for the samples. Calibration is also well known in the art, as background readings need to be subtracted to get true luminescence readings.

Response to Arguments

5. Applicant's arguments filed May 2, 2001 have been fully considered but they are not persuasive.

6. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure,

such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

7. In response to applicant's argument that the references were impermissibly combined due to the lack of suggestion to combine and the inability of the features of the secondary references to function with the method and apparatus of the primary references, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

8. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

9. Applicant's argument that there is no motivation to combine the transparent reaction modules of Uzan et al. with the radiopaque block of Berthold et al. is not persuasive. Since Berthold et al. use a radiopaque block to hold the transparent cuvettes, it would have been obvious that their intention was to protect the reaction cuvettes from external light. Therefore, by simply using opaque cuvettes, one would have been able to achieve the clear intention of Berthold et al. in a more efficient manner, which is ample motivation to undertake this substitution. In response to

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applicant's arguments that the chemiluminescent substance of Smethers et al. was improperly combined with the Uzan et al. and Berthold et al. due to the fact that neither Uzan or Berthold use a chemiluminescent substance, the examiner disagrees. If either Uzan et al. or Berthold et al. had taught a chemiluminescent substance, a prima facie case of obviousness would not have to be established with a third reference, as this feature would have been rendered obvious by combination of the Uzan et al. and Berthold et al. alone. However, since the use of chemiluminescent labels were widely known and used for the purpose of detecting light emission at the time of the invention, it would have been obvious to use this type of label with the modified vessel of Uzan et al. and Berthold et al. Applicant's assertion that a fourth reference, namely Honzawa et al., cannot be combined with the previous three references because it teaches an apparatus for measuring only a single sample is also erroneous. Honzawa et al. was only relied upon for teaching of a shutter mechanism and lightproof shoe, therefore rendering applicant's arguments moot. In addition, Honzawa et al. do indeed teach a substantially plane zone against which a light proof shoe is pressed. As applicant acknowledges, "substantially plane" simply means that external light must be prevented from penetrating the device. As such, the dark box of Honzawa et al. qualifies as a light proof shoe protecting the reaction vessel from external light, as it holds and surrounds the reaction tube, and prevents external light from entering.

10. Applicant's arguments that detection cannot occur when the shutter is closed is inaccurate. The cover (feature 6) of the apparatus of Honzawa et al. can be interpreted as a shutter, and it must be closed for detection to occur. In addition, although rotation of the of the cylindrical member would create openings for detection to occur, a temporary dark chamber would still be formed with the photomultiplier, as is necessary for detection of chemiluminescence to occur. Any

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external light would contaminate the results, making it inherent that external light is prevented from interfering with the detection step.

11. Applicant's arguments that combination of the aforementioned 4 references would not provide a reasonable expectation of success is not convincing. If one were motivated to combine the reference, as discussed above, it is inherent that there is a reasonable expectation of success.

Allowable Subject Matter

12. Claim 11 is allowable over the prior art of record.

13. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: the closest prior art of record do not disclose or teach an apparatus, wherein a light source illuminates the outside of a dark chamber to test the apparatus for light tightness. Therefore, claim 11 is novel and unobvious over the art of record.

Conclusion

Claims 1, 4-10, and 12-15 are rejected, and claim 11 is objected to.

Clark et al. and Chen are cited as art of interest to the disclosure of applicant for teaching various detection devices and methods.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

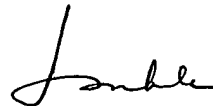
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kartic Padmanabhan whose telephone number is 703-305-0509. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 703-305-3399. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4243 for regular communications and 703-305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Kartic Padmanabhan
Patent Examiner
Art Unit 1641

May 14, 2001


LONG V. LE
SUPERVISORY PATENT EXAMINER
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05/17/01